WHAT IS CLAIMED IS:

1. A motion-activated lighting fixture including an aimable PIR motion detector, the motion detector including a housing having a generally forward looking window, the motion detector being structured and arranged to define a first plurality of infra-red detection zones directed through said generally forward looking window, detection zones of said first plurality forming a first zonal pattern extending in the generally forward direction and arranged for monitoring a far field at a far level of vision, and the housing being movably mounted on a base member so as to permit the far field to be aimed at various positions closer and farther away, wherein the improvement is characterized in that:

said housing has a generally horizontal downward looking window disposed at the underside of said housing and includes an optical arrangement focusing infra-red energy from a second plurality of detection zones through said downward looking window, said second plurality of detection zones forming a second zonal pattern for monitoring a field behind said motion detector housing, the zones of said second zonal pattern being angulated and disposed with respect to said far level of vision such that one or more of the zones of said second zonal pattern will be in disposition for monitoring the field behind said motion detector housing when said far field is aimed at said various positions.

2. The apparatus of claim 1, further characterized in that the zones of said first and second pluralities are arranged such that the field behind said motion detector housing is monitored entirely by zones of said second zonal pattern.

3. The apparatus of claim 1, further characterized in that detection zones of said first plurality form a further zonal pattern extending in the generally forward direction and arranged for monitoring intermediate fields not so distant as said far field.

4. The apparatus of claim 1, further characterized in that said motion detector comprises at least one forward sensor and at least one downward sensor, and said motion detector is structured and arranged to focus infra-red energy from said first plurality of detection zones

through said generally forward looking window onto said at least one forward sensor and to focus infra-red energy from said second plurality of detection zones through said generally downward looking window onto said at least one downward sensor.

5. The apparatus of claim 4, further characterized in that said motion detector comprises a single downward looking sensor and a downward looking segmented Fresnel lens member disposed to direct infra-red energy onto said single downward looking sensor.

6. The apparatus of claim 5, wherein said segmented Fresnel lens member defines said second zonal pattern in the form of a generally conical shape.

7. The apparatus of claim 6 wherein said single downward looking sensor is disposed to look in a substantially vertical downward direction when said housing is level and said segmented Fresnel lens is disposed such that the central axis of said generally conical shape lies along said substantially vertical downward direction.

8. The apparatus of claim 6, further characterized in that said motion detector comprises two forward looking sensors angled toward opposite sides of the straight ahead direction.

9. The apparatus of claim 1, wherein said second zonal pattern is generally conically shaped.

10. The apparatus of claim 1, wherein said second zonal pattern is generally curtain shaped.

11. The apparatus of claim 1, further characterized in that said motion detector includes one and only one sensor and said motion detector is structured and arranged to focus infra-red energy from said first plurality of detection zones through said generally forward looking window onto said sensor and from said second plurality of detection zones through said generally downward looking window onto said sensor.

12. The apparatus of claim 11, further characterized in that said motion detector includes a segmented Fresnel lens member disposed in said generally downward looking window and formed to define said second zonal pattern in the form of a curtain pattern.

13. The apparatus of claim 1, wherein at least some of the detection zones of said second zonal pattern are arranged so as to extend in the backward direction when said motion detector housing is horizontal.

14. The apparatus of claim 1, further characterized in that said second zonal pattern is arranged such that detection zones of said second zonal pattern extend backward only when said motion detector housing is aimed below horizontal by an angle greater than a characteristic angle.

15. The apparatus of claim 14 wherein said characteristic angle is at least as great as 14 degrees.

16. The apparatus of claim 1 wherein said second plurality of detection zones forms a dense zonal pattern for dense coverage of the region behind and under said motion detector.

17. The apparatus of claim 16 wherein said second plurality of detection zones has a density of at least one level of vision per twelve degrees of forward-back coverage.

18. A motion-activated lighting fixture including an aimable PIR motion detector structured and arranged to define a plurality of infra-red detection zones, a first group of the detection zones forming a first zonal pattern disposed for monitoring a far field, the housing being movably mounted on a base member so as to permit the far field to be aimed at various positions closer and farther away, wherein the improvement is characterized in that:

the detection zones of said first group are confined substantially to the forward direction; and

said plurality of detection zones includes a plurality of backward directed detection zones angulated with respect to said first zonal pattern to extend in the downward and backward direction when said far field is aimed at said various positions,

wherein the direction of each said backward directed detection zone is characterized by a dip angle φ_{dip} and azimuth θ determined when said housing is level, and said plurality of backward directed detection zones has no detection zones with a dip angle of less than φ_{limit}, determined by the relation

$$\tan \varphi_{limit} = \sin \theta \tan 60°.$$

19. The apparatus of claim 18 wherein φ_{limit} is determined by the relation

$$\tan \varphi_{limit} = \sin \theta \tan 50°.$$

20. The apparatus of claim 18 wherein φ_{limit} is determined by the relation

$$\tan \varphi_{limit} = \sin \theta \tan 30°.$$

21. A motion-activated lighting fixture including an aimable PIR motion detector, the motion detector including a housing having a generally forward looking window, the motion detector being structured and arranged to define a first plurality of infra-red detection zones directed through said generally forward looking window, detection zones of said first plurality forming a first zonal pattern extending in the generally forward direction and arranged for monitoring a far field at a far level of vision, and the housing being movably mounted on a base member so as to permit the far field to be aimed at various positions closer and farther away, wherein the improvement is characterized in that:

said housing has a generally horizontal downward looking window disposed at the underside of said housing and includes an optical arrangement focusing infra-red energy from a second plurality of detection zones through said downward looking window, said second plurality of detection zones forming a second zonal pattern for monitoring a field behind and under said motion detector housing,

wherein the zones of said second zonal pattern are disposed to angle forward when said housing is in horizontal disposition, and one or more of said zones is angled forward by a least offset angle, said least offset angle being sized such that said zones at said least offset angle will be brought into backward-monitoring disposition when said motion detector housing is tilted downward by an angle at least as great as said least offset angle for aiming said far field.

22. A motion-activated lighting fixture including an aimable PIR motion detector, the motion detector including a housing movably mounted on a base member so as to permit the motion detector to be aimed in a desired direction, wherein the motion detector comprises:

a generally forward looking window;

a first support structure within said housing and one or more sensors mounted on said first support structure;

a first optical arrangement structured and arranged to focus infra-red energy through said generally forward looking window onto said one or more sensors, said first optical arrangement and said sensors being disposed to define a first plurality of detection zones wherein at least some of the detection zones of said first plurality form a first zonal pattern extending in the generally forward direction and arranged for monitoring a far field at a far level of vision;

a generally downward looking window formed at the underside of said housing;

a second support structure within said housing and a generally downward looking sensor mounted on said second support structure;

a second optical arrangement structured and arranged to focus infra-red energy through said generally downward looking window onto said downward looking sensor, said second optical arrangement and said downward looking sensor being disposed to define a second plurality of detection zones,

wherein the zones of said second plurality are disposed to provide coverage of a region behind and under said motion detector when said housing is moved to aim said far field at a practical range of positions closer and farther away.

23. The apparatus of claim 22 wherein said motion detector comprises a pair of sensors mounted on said first support structure, the sensors of said pair being aimed generally forward and angled toward opposite sides.

24. The apparatus of claim 22 wherein said second optical arrangement defines one or more focal lengths shorter than focal lengths of said first optical arrangement.

25. The apparatus of claim 22 wherein said first optical arrangement comprises one or more first segmented Fresnel lens members disposed to focus infra-red energy onto said one or more sensors, and said second optical arrangement comprises a second segmented Fresnel lens member disposed to focus infra-red energy onto said downward looking sensor.

26. The apparatus of claim 25 wherein said second segmented Fresnel lens member is disposed closer to said downward looking sensor than said one or more first Fresnel lens members are to said one or more forward looking sensors, thereby to facilitate shorter focal lengths for said second Fresnel lens member, whereby said second plurality of detection zones is better adapted for close-in monitoring.

25. The apparatus of claim 20 wherein said second plurality of detection zones has a density of at least one level of vision per twelve degrees of forward-back coverage.